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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,363	02/21/2001	Shinji Nakahara	01017/LH	4454

7590

05/09/2002

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EXAMINER

MOORE, KARLA A

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 05/09/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/744,363

Applicant(s)

NAKAHARA ET AL.

Examiner

Karla Moore

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Objections

1. Claim 3 objected to because of the following informalities: The word "force" is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Publication No. 06-267855 to Suzuki in view of U.S. Patent No. 5,094,885 to Selbrede.
4. Suzuki discloses an epitaxial growth furnace (65) for effecting the formation of an epitaxial layer (14) on the surface of a semiconductor wafer (11) by supplying under a high temperature condition a source gas to a surface area being subject to epitaxial growth within a sealed chamber of the furnace, said wafer being supported on a wafer holder (12) within said chamber, wherein said wafer holder comprises: an opening for exposing said surface area of the wafer (beneath the wafer) and an opening flange (12a) adapted for engagement with only the whole peripheral edge of said wafer on the side of said surface area which is subject to epitaxial growth.
5. However, Suzuki fails to disclose a plurality of jaw means adapted for detachably engaging with an outer periphery of the wafer on a back surface side of said surface area.
6. Selbrede discloses a plurality of jaw means/flexible wafer supports (23, 25) for detachably engaging with an outer periphery of the wafer on a back surface side of said surface area for the purpose of supporting a wafer (27) during processing (column 5, rows 41-44) with minimal contact area (column 5, rows 52-54).
7. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a plurality of jaws for detachably engaging with an outer periphery of the

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wafer on a back surface side of said surface area in Suzuki in order to support a wafer during processing with minimal contact area as taught by Selbrede.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Selbrede as applied to claims 1 and 2 above, and further in view of U.S. Patent No. 5,458,322 to Kulkaski et al.

9. Suzuki and Selbrede disclose the invention substantially as claimed and described above.

10. However, Suzuki and Selbrede fail to disclose that the jaw means further comprise spring means for thrusting each said jaw means toward a center of said opening, and detachable actuating means for locking each jaw said means in a released position against the thrust force from said spring means.

11. Kulkaski et al. disclose jaw means/spring clip with spring means (Figures 1-3,13) and detachable actuating means (31; column 3, rows 57-65) for locking each jaw in a released position against the thrust force from said spring means for the purpose of installing and removing a substrate from the jaw means.

12. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided spring means and detachable actuating means in Suzuki and Selbrede in order to install and remove substrates from jaw means as taught by Kulkaski et al.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki and Selbrede as applied to claims 1 and 2 above, and further in view of European Patent Application No. 840 358 to Balance et al.

14. Suzuki and Selbrede disclose the invention substantially as claimed and described above.

15. However, fail to disclose an inclined face corresponding to the edge of the wafer on said back surface side thereof.

16. Balance et al. disclose a sloped substrate support for the purpose of reducing the effect and severity of scratches on the substrate caused by the support thereby improving substrate yield (abstract).

17. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have included an inclined face corresponding to the edge of the wafer on said back surface side thereof in order in Suzuki and Selbrede in order to reduce the effect and severity of scratches on a substrate caused by the support thereby improving the substrate yield, as taught by Balance et al.

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Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km
May 6, 2002


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700